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(30) Priority:	(71) Applicant: <b>HITACHI LTD HITACHI AUTOMOT ENG CO LTD</b>
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**(54) ABNORMAL VOLTAGE  
DETECTION CIRCUIT FOR  
CHOPPER**

(57) Abstract:

**PURPOSE:** To protect a chopper against overvoltage, by detecting that the terminal voltage of the chopper is clamped to Zener voltage for longer time than a predetermined time.

**CONSTITUTION:** A motor M and a

transistor TR are connected in series with a DC power source V0, and a diode DF is connected in parallel with the motor M. A Zener diode ZD is connected between the collector C and the base B of the TR in order to suppress the collector-emitter voltage VCE below the Zener voltage. A microcomputer MPU outputs a base signal DUTY from the pulse width terminal P and controls the TR to perform speed control of the motor M. The microcomputer MPU has an analog input terminal AI for receiving the voltage VCE of the TR. Normal judgement is made for the voltage VCE lower than the Zener voltage while overvoltage judgement is made for the voltage higher than the Zener voltage. Upon judgement of overvoltage, provision of base signal is stopped from next cycle.

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